

crystallinity of less than about 20% and a number-average molecular weight between about 500 and about 40,000, and between about 5 and about 50 weight percent of an isotactic polypropylene having a degree of crystallinity of at least about 40% and a number-average molecular weight between about 3,000 and about 150,000, wherein the adhesive composition has a melt index between about 200 and about 1800 grams per 10 minutes and is hot-melt processable at less than about 450 degrees Fahrenheit.

No additional fee is due for this Amendment because the number of independent claims remains unchanged and the total number of claims has decreased.

REMARKS

Applicants' undersigned attorney thanks the Examiner for her comments. Applicants respectfully request reconsideration of this patent application, particularly in view of the above Amendment and the following remarks. Currently, Claims 1-76 are pending.

The present invention is directed to laminated structures including at least one elastomeric material bonded to itself or to another substrate with a hot-melt adhesive composition that includes a combination of atactic polypropylene and isotactic polypropylene. The adhesive composition has better performance characteristics, e.g. shear and peel bonding strengths, than conventional hot-melt adhesives and may cost less than conventional hot-melt adhesives.

Amendment to the Specification

The Brief Description of the Drawings has been amended at page 5, lines 20-21, to include descriptions of Figs. 1A, 1B, and 1C, rather than a single Fig. 1, to correspond with the formal drawings filed 16 October 2001.

Amendment to the Claims

Claims 1-76 have been examined with no claims being allowed. Applicants request cancellation of Claims 11, 12, 31, 32, 58, and 59. Amended Claims 1, 21, 42, 43, and 48 are included herein. Marked-up versions of amended Claims 1, 21, 42, and 43 are included at the end of this document.

Applicants have amended Claims 1, 21, and 48 to include the limitations of Claims 12, 32, and 59, respectively, thereby including the limitation of

the adhesive composition having a melt index between about 200 and about 1800 grams per 10 minutes. Thus, Applicants request cancellation of Claims 11, 12, 31, 32, 58, and 59.

Applicants have further amended Claims 1 and 21 to recite that the adhesive composition includes “between about 50 and about 90 weight percent” atactic polypropylene and “between about 5 and about 50 weight percent” isotactic polypropylene. Support for this amendment is found on page 19, lines 9-11.

Applicants have further amended Claim 21 to replace the term “poly” with the term “polypropylene.” Support for this amendment is found throughout the specification, and in particular on page 14, lines 2-7.

Applicants have amended Claims 42 and 43 to overcome the rejection of Claims 42 and 43 under 35 U.S.C. §112, second paragraph, as explained below.

No new matter has been added by this amendment.

Claim Rejections - 35 USC §112

The rejection of Claims 42 and 43 under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention is respectfully traversed. Applicants have amended Claims 42 and 43 by removing the term “nonwoven,” as suggested by the Examiner. Accordingly, Applicants respectfully request reconsideration and withdrawal of this rejection.

Claim Rejections - 35 USC §103

A. Wang in view of Hall, Jr., et al.

The rejection of Claims 1-17, 20-36, 42, 43, 45-62, 64, 66, and 68-75 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,329,468 to Wang in view of U.S. Patent No. 3,370,106 to Hall, Jr., et al., is respectfully traversed.

Wang teaches a hot melt adhesive composition including a blend of a flexible polyolefin, a tackifying resin, a plasticizer, and optionally a synthetic polyolefin wax or petroleum wax. The composition includes only 10% to 40% by weight of the flexible polyolefin. The flexible polyolefins used in the Examples had melt indexes ranging from 35 to 150 grams per 10 minutes, as determined from

ASTM D-1238. Wang further teaches that the hot melt adhesive composition is suitable for bonding various elastic materials to porous and nonporous substrates.

Hall, Jr., et al. teach a hot melt adhesive that contains 75 to 95 weight percent atactic polypropylene and 5 to 25 weight percent of either isotactic polypropylene or polyethylene, the polyethylene having a melt index of 2 to 10. Hall, Jr., et al. further teach that the hot melt adhesive is suitable for bonding corrugated paper and kraft paper.

Claims 1, 21, and 48 have been amended to recite that the adhesive composition has a melt index between about 200 and about 1800 grams per 10 minutes. This melt index range is determined according to ASTM D-1238, as indicated on page 14, lines 10-13, of the specification. None of the flexible polyolefins cited in Wang have a melt index in Applicants' claimed range. Also, the melt index of one component in Hall, Jr., et al. (melt index of 2 to 10) is well below Applicants' claimed range.

Claims 1 and 21 have been amended to recite that the adhesive composition includes "between about 50 and about 90 weight percent" atactic polypropylene and "between about 5 and about 50 weight percent" isotactic polypropylene. Consequently, independent Claims 1, 21, and 48 each recite an adhesive composition having these percentages of atactic and isotactic polypropylene to bond an elastomeric material to another substrate. In contrast, Wang teaches that such a composition, including 60% or more of substances other than a propylene-based polymer made up of a combination of atactic and isotactic structures, may be used to bond an elastomeric material to another substrate. Hall, Jr., et al. fail to teach or suggest an adhesive composition that bonds an elastomeric material to another substrate.

The Examiner suggests that it would have been obvious to one having ordinary skill in the art to employ the hot-melt adhesive composition of Hall, Jr., et al. as the hot-melt composition taught in Wang. However, Wang teaches away from using solely the hot-melt composition taught in Hall, Jr., et al. because Wang teaches that a composition similar to the composition taught in Hall, Jr., et al. can be improved upon by including at least 60% of other substances in the composition.

Thus, Wang does not teach the applicability of the composition taught in Hall, Jr., et al. for bonding elastic materials to various other substrates, but instead teaches that the composition of Hall, Jr., et al. by itself is inadequate and can be improved upon to create an entirely different adhesive composition that *is* suitable for bonding elastomeric materials to various substrates.

For at least the reasons given above, Applicants respectfully submit that the teachings of Wang in view of Hall, Jr., et al. fail to teach or suggest Applicants' claimed invention. Accordingly, reconsideration and withdrawal of this rejection is respectfully requested.

B. Wang in view of Hall, Jr., et al., further in view of Meece et al.

The rejection of Claims 17-19, 37-41, 63, and 65 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,329,468 to Wang in view of U.S. Patent No. 3,370,106 to Hall, Jr., et al., as applied to Claims 1, 21, and 48 above, and further in view of U.S. Patent Application No. 2002/0039637 to Meece et al., is respectfully traversed.

Meece et al. teach an elastic laminate including at least one nonwoven layer that can be stretched up to 700%. The laminate can be stretched in one or more directions. Meece et al. further teach that the elastic laminate can be bonded by application of a hot melt or other suitable adhesive.

A person skilled in the art and motivated to produce an absorbent article with the desired extensibility in both the machine and cross directions would logically use the nonwoven extensible webs and the elastomeric members taught by Meece et al. in the absorbent article of Wang, and would logically use the adhesive composition taught in Wang. As discussed above, Wang teaches away from Applicants' invention because Wang teaches that an adhesive composition composed of propylene-based polymers having a combination of atactic and isotactic structures is insufficient, by itself, to bond elastic materials to various materials, and that such an adhesive composition can be combined with 60% or more of other substances to render an adhesive composition suitable for bonding elastic materials to various materials.

For at least the reasons given above, Applicants respectfully submit that the teachings of Wang in view of Hall, Jr., et al., further in view of Meese et al., fail to teach or suggest Applicants' claimed invention. Accordingly, reconsideration and withdrawal of this rejection is respectfully requested.

C. *Wang in view of Hall, Jr., et al., further in view of Zafiroglu et al.*

The rejection of Claims 37, 44, 63, and 67 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,329,468 to Wang in view of U.S. Patent No. 3,370,106 to Hall, Jr., et al., as applied to Claims 21 and 48 above, and further in view of U.S. Patent No. 5,468,320 to Zafiroglu et al., is respectfully traversed.

Zafiroglu et al. teach a process for making an anatomically form-fitting elastic undergarment. Zafiroglu et al. further teach that various attachment means may be used in the process, such as heat or pressure activated adhesives, glues, thermal or ultrasonic bonding and the like.

A person skilled in the art and motivated to provide a single substrate comprising elastomeric members and bonded to itself for use in an absorbent disposable garment would logically use the process taught by Zafiroglu et al. in the absorbent article of Wang, and would logically use the adhesive composition taught in Wang. As discussed above, Wang teaches away from Applicants' invention because Wang teaches that an adhesive composition composed of propylene-based polymers having a combination of atactic and isotactic structures is insufficient, by itself, to bond elastic materials to various materials, and that such an adhesive composition can be combined with 60% or more of other substances to render an adhesive composition suitable for bonding elastic materials to various materials.

For at least the reasons given above, Applicants respectfully submit that the teachings of Wang in view of Hall, Jr., et al., further in view of Zafiroglu et al., fail to teach or suggest Applicants' claimed invention. Accordingly, reconsideration and withdrawal of this rejection is respectfully requested.


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Docket No.: KCC-16,631

Conclusion

Applicants believe that this case is now in condition for allowance. If the Examiner feels that any issues remain, then Applicants' undersigned attorney would like to discuss the case with the Examiner. The undersigned can be reached at (847) 490-1400.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Melanie I. Rauch", written in a cursive style.

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**VERSION WITH MARKINGS TO SHOW CHANGES MADE
IN THE SPECIFICATION:**

At page 5, lines 20-21:

Figure [1] 1A gives a symbolic [representations] representation of a syndiotactic[, isotactic, and atactic configurations] configuration of a polymer.

Figure 1B gives a symbolic representation of an isotactic configuration of a polymer.

Figure 1C gives a symbolic representation of an atactic configuration of a polymer.

**VERSION WITH MARKINGS TO SHOW CHANGES MADE
IN THE CLAIMS:**

1. (Amended) A laminated structure comprising:
a non-woven substrate;
at least one elastic strand; and
a hot-melt adhesive composition bonding the non-woven substrate and the at least one elastic strand to one another, wherein the adhesive composition includes between about 50 and about 90 weight percent atactic polypropylene having a degree of crystallinity of less than about 20% and a number-average molecular weight between about 500 and about 40,000, and between about 5 and about 50 weight percent isotactic polypropylene having a degree of crystallinity of at least about 40% and a number-average molecular weight between about 3,000 and about 150,000, wherein the adhesive composition has a melt index between about 200 and about 1800 grams per 10 minutes and is hot-melt processable at less than about 450 degrees Fahrenheit.

21. (Amended) A laminated structure comprising:
a first non-woven elastic substrate;
a second non-woven substrate; and
a hot-melt adhesive composition bonding the first non-woven elastic substrate and the second non-woven substrate to one another, wherein the adhesive composition includes between about 50 and about 90 weight percent atactic polypropylene having a degree of crystallinity of less than about 20% and a number-average molecular weight between about 500 and about 40,000, and between about 5 and about 50 weight percent isotactic [poly] polypropylene having a degree of crystallinity of at least about 40% and a number-average molecular weight between about 3,000 and about 150,000, wherein the adhesive composition has a melt index between about 200 and about 1800 grams per 10 minutes and is hot-melt processable at less than about 450 degrees Fahrenheit.

42. (Amended) The laminated structure of Claim 21, wherein the first [non-woven] elastic substrate comprises at least one of the group consisting of a necked-bonded laminate, a stretch-bonded laminate, a polypropylene spunbonded layer, a polyethylene layer in combination with a polypropylene spunbonded layer, a styrene-isoprene-styrene strand, a styrene-butadiene-styrene strand, a styrene-ethylene/propylene-styrene strand, a styrene/ethylene-co-butadiene/styrene strand, and a polyurethane strand.

43. (Amended) The laminated structure of Claim 21, wherein the second [non-woven] substrate comprises at least one of the group consisting of a necked-bonded laminate, a stretch-bonded laminate, a spunbond-meltblown-spunbond laminate, a polypropylene spunbonded layer, a polyethylene layer in combination with a polypropylene spunbonded layer, a styrene-isoprene-styrene strand, a styrene-butadiene-styrene strand, a styrene-ethylene/propylene-styrene strand, a styrene/ethylene-co-butadiene/styrene strand, and a polyurethane strand.

48. (Amended) An absorbent article comprising:

a first elastomeric substrate;

a second substrate; and

a hot-melt adhesive composition bonding the first substrate and the second substrate to one another, wherein the adhesive composition includes between about 50 and about 90 weight percent of an atactic polypropylene having a degree of crystallinity of less than about 20% and a number-average molecular weight between about 500 and about 40,000, and between about 5 and about 50 weight percent of an isotactic polypropylene having a degree of crystallinity of at least about 40% and a number-average molecular weight between about 3,000 and about 150,000, wherein the adhesive composition has a melt index between about 200 and about 1800 grams per 10 minutes and is hot-melt processable at less than about 450 degrees Fahrenheit.